Other Elements Contributing to Achieving the Co-Equal Goals and Protecting the Delta Preliminary Outline

Successful management of water resources to achieve the co-equal goals and overall Delta sustainability will require continued improvement in managing California's finite water resources. The urgent need for a comprehensive strategy to reduce reliance on the Delta for meeting California's growing water demand was a fundamental conclusion of the Delta Vision process, and was reiterated in a recent National Research Council Report (*Sustainable Water and Environmental Management in the California Bay-Delta*, 2012). There is much to gain in both water supply reliability and ecosystem protection and restoration, from improved water management throughout California.

The following elements, while not part of the BDCP itself, will clearly help enhance its success by promoting more flexibility and better management of water to satisfy current and future demands. The elements include a strong State and Federal commitment to using the Integrated Water Management approach to achieve: (1) Reductions in Water Demand; (2) Increases in Water Supply; and (3) Improvements in Efficiency of Operations.

The state and federal governments recognize the importance of continuing the substantial investments being made in improved water management in California through existing programs (e.g. WaterSMART, EQIP, IRWM). Accordingly, the state and federal governments will consider opportunities to ensure those investments continue, potentially through dedicated revenue sources, although any such proposals would likely require State and/or Federal legislation.

Overall, these additional elements are intended to be implemented in the manner they have been historically applied – through voluntary agreements that are cost-shared in recognition of the benefits to both the public at large and the entities involved. These programs represent opportunities, not mandates. Moreover, environmental review, with public input, will be necessary before binding commitments can be made to any of these elements. It is anticipated that they can be implemented by the state and federal governments as part of their broader responsibilities for California water planning, separate from but complementary to the BDCP.

Integrated Water Management

This element embraces an Integrated Water Management (IWM) approach within the upstream areas to the Delta, within the Delta proper, and within the Central Valley Project (CVP) and the State Water Project (SWP) service areas. Within the IWM context, all water management programs and projects are integral and interconnected—it is through this interconnectivity that IWM programs and projects maximize their value. The value of IWM is to integrate water management, flood management, and ecosystem programs to maximize limited resources and yield multiple benefits—life safety and reduction of flood risk, water supply reliability and economic stability, and environmental enhancements. IWM also provides value in integrating regional water supply reliability solutions with system wide solutions. Most California water management actions affect the Delta;

therefore, sustainable integrated flood and water management should include considerations of the Delta ecosystem, water supply and conveyance roles, and comprehensive flood risk management. The opportunity exists to build upon the numerous state and federal programs and projects currently underway in the Delta and throughout California. They include:

- Delta conveyance,
- Delta flood emergency response,
- flood management (special projects and subvention programs),
- fish passage improvements,
- tributary habitat restoration,
- long term management of dredge materials, and
- Integrated Regional Water Management Plans.

An IWM approach promotes system flexibility to adapt to changing conditions (such as climate change, policies and regulations, etc.) and enhances the natural environment. This element will enhance solution opportunities by partnering across all levels of government and interest groups to align water planning, policies, and regulations.

Reduce water demand

The state and federal governments will invest in measures that have the potential to help reduce water demand or increase supply reliability to make more efficient use of existing supplies. Water management actions under this element may utilize behavioral and technological improvements to use water more efficiently while still meeting existing and future beneficial needs. These actions may include:

- water conservation: The California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) will partner with districts that have potential for water saving by implementing water conservation practices such as regulation reservoirs, canal lining, system automation, modernization projects and efficient irrigation practices.
- agricultural water use efficiency: State and federal agencies will partner with water districts to encourage the use of drip and micro irrigation systems, irrigation scheduling, crop shifting, deficit irrigation, and other efficient water management practices. They will also provide assistance to enable implementation of SB7x7which requires certain agricultural water suppliers to measure water delivered to their customers and bill based at least in part on volume delivered.
- urban water use efficiency: State and federal agencies will assist with implementation of SB7x7, which requires California urban water suppliers to reduce urban per capita water use by 20% by the year 2020.

Increase Water Supply

This water management element involves finding or creating additional sources of water as well as improving management of existing water supplies to more efficiently store and provide water for California, even in drought years. The types of water management

actions that could be implemented to meet the goals of this element include:

- conjunctive management and groundwater storage: There is considerable interest and opportunity for additional ground water storage south of the Delta. Generally these projects need a state or federal partner to assist in permitting, aid in public acceptability, and contribute to cost effectiveness for the local partners. This is an area where commitment of funding and support could expand the quantity and efficiency of water supply particularly in the San Joaquin valley.
- desalination: Potential options regarding desalination should be explored as part of this element.
- recycled municipal water: To date, Reclamation has invested over $500 million in Title XVI recycle and reuse projects in California resulting in about 250,000 acre feet of new water annually. With an increase in the availability of state or federal (principally federal) funding, there is an opportunity to expand the usable water supply south of the Delta in both the SWP and CVP service areas. Accelerated completion of projects underway could yield up to an additional 400,000 acre feet of water annually. This illustrates the significant potential for adding to the available water supply for CVP and SWP contractors. Although this can be expensive water, it is becoming more competitive and has considerable political and public support.
- surface storage: It is believed that most potentially viable dam and reservoir sites have been identified and assessed as part of previous water resources studies at one time or another. However, the need to determine and pursue the most viable options merits consideration as part of this element. Also there may be opportunities to modify existing surface storage structures (e.g. modification to spillways and/or spillway gate structures or raising existing dams) in ways that can increase storage capacity or offer operational opportunities that can enhance water supplies without causing undue adverse environmental or other impacts. Hence, an interagency team drawn from state and federal agencies will be established to focus on the storage projects that offer the most potential and will provide information to be considered as part of additional sources of water. Once identified, those with the most potential for completion and the greatest cost effectiveness will be aggressively pursued.

Improve Operational Efficiency and Transfers/Exchanges

Operational improvements of the two major water projects in California could lead to improved efficiencies to water supply, and improvements to [?]the biological resources. The CVP generally has more storage and less conveyance flexibility than the SWP. The opposite is true for the SWP. The SWP and CVP are operated by DWR and Reclamation, respectively. The operations of the two projects are coordinated through the 1986 Coordinated Operating Agreement. Even through coordinated operations, the SWP and CVP are not operating as one unit. They each have different contractual obligations and operating constraints. Operational improvements proposed under this element take advantage of the strengths of both projects. This water management element involves

changing the mode of transportation of water and the way water is used and stored to better meet current and future demand. In addition, there is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. The types of water management actions that could be implemented to meet the goals of this element include:

- conveyance: The movement of water south of the Delta in order to facilitate efficient use of currently available supplies is significantly limited by the absence of east/west conveyance. There are many proposed projects for improving the movement of water from east to west and west to east that have good general support but lack funding to support local interest. State and federal support in the permitting process can also enhance their success.
- system reoperation: Reclamation and DWR will establish a joint team to evaluate CVP/SWP system reoperations and identify specific measures with quantifiable efficiencies.
- transfers/exchanges: There is considerable opportunity for increases in water transfers and exchanges throughout the Central Valley including SWP, CVP, and non-project interests. There is an opportunity to accelerate or expand on ongoing activities with additional funding from the federal or state agencies to support local interest in these historically private transactions. Examples include the 25 year Exchange Contractor transfer program and the North/South transfer program currently being evaluated under NEPA. There is also interest from certain San Joaquin River and tributary interests in a "Yuba Accord" type of arrangement. Exchange opportunities also offer flexibility in timing of deliveries so as to better take advantage of existing water supplies to meet demands at certain times of the year.